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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/728,784

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Kia Silverbrook

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SILVERBROOK RESEARCH PTY LTD  
393 DARLING STREET  
BALMAIN, 2041  
AUSTRALIA

EXAMINER

NGUYEN, LAMSON D

ART UNIT

PAPER NUMBER

2861

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/728,784	<b>Applicant(s)</b> SILVERBROOK, KIA	
	<b>Examiner</b> Lamson D. Nguyen	<b>Art Unit</b> 2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) 21-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20, 31-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 7-9, 11, 17-19, 31, 37-39 are rejected under 35 U.S.C. 102(b) as being anticipated by Sugitani (4,905,017).

***Kawamura et al teach an inkjet printhead, ejecting method, printing system comprising:***

- (Claims 1, 11, 31) a wafer having a droplet ejection side and a liquid supply side opposite the droplet ejection side, a plurality of nozzles (figure 4, wafer/nozzle plate 408 having droplet ejection side/top side and liquid supply side/bottom side, nozzles 409) formed on the droplet ejection side of the wafer, a plurality of liquid passages corresponding to each nozzle respectively (figure 4, the nozzle holes 409 formed on top of nozzle plate 408 are the liquid paths), each of the individual liquid passages leading to each nozzle respectively for providing ejectable liquid to the associated the nozzle (figure 4, ink nozzles 409 eject out ink), and droplet ejection actuators and associated drive circuitry corresponding to each nozzle respectively (figure 4, actuators 402, each corresponding to each nozzle 409); and, wherein, the

- wafer has a drop ejection side and a liquid supply side (figure 4); such that, each of the individual liquid passages is formed by a hole in the wafer from the drop ejection side, and a supply passage through the wafer from the liquid supply side of the wafer to form a fluid connection with the hole (figure 4 teaches supply passage paths 406-1 and 406-2 each having an area of a hole that corresponding through the nozzles if the nozzle plate).
- (Claims 7, 17, 37) wherein the droplet ejection actuators are gas bubble generating heater elements (figure 4, heating elements 402).
  - (Claims 8, 18, 38) further including a plurality of nozzle chambers, each nozzle chamber corresponding to a respective nozzle (figure 4, ink chambers 407-1 and 407-2, each corresponding to each nozzle 409); wherein, at least one of the gas bubble generating heater elements are disposed in each of the nozzle chambers respectively (figure 4, each nozzle corresponds to each heating element 402); such that, a bubble forming liquid can be supplied to the nozzle chamber for thermal contact with at least one of the bubble generating heater elements so that a bubble of the bubble forming liquid generated by one of the heater elements causes a droplet of the ejectable liquid to be ejected from the nozzle (figure 4, well-known feature).
  - (Claims 9, 19, 39) wherein the bubble forming liquid is the same as the ejected liquid (figure 4).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-5, 12-15, 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugitani.

***Sugitani teaches all claimed features of the instant application except:***

- (Claims 2, 12, 32) wherein the width of the hole is greater than 8 microns.
- (Claims 3, 13, 33) wherein the width of the hole is less than 24 microns.
- (Claims 4, 14, 34) wherein the width of the supply passage is greater than 14 microns.
- (Claims 5, 15, 35) wherein the width of the supply passage is less than 28 microns.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the width of the hole and the supply passage as above for the purpose of providing different ink sizes through the nozzle, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Claims 10, 20, 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugitani et al in view of Hermanson (5,581,284).

Sugitani teaches all claimed features except a pagewidth printhead.

It is well-known in the art of inkjet printers that a printing system having a pagewidth can work as well with a serial-type carriage printhead, or vice versa, as taught by Hermanson (column 6, lines 47-50).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Sugitani et al to incorporate the teaching of a pagewidth printhead for the purpose of increasing print throughput as is well-known in the art.

Claims 6, 16, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugitani in view of Jeanmaire et al. (6,575,566).

Sugitani teaches all claimed features except:

- (claims 6, 16, and 36) the droplet ejection actuators are thermal bend actuators.

It is well-known in the art of inkjet printers to utilize thermal bend actuators as taught by Jeanmaire et al (figure 12).

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-20 and 31-40 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Sugitani to incorporate the

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teaching of thermal bend actuators as taught by Jeanmaire for the purpose of ejecting out ink drops.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lamson D. Nguyen whose telephone number is 571-272-2259. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Luu can be reached on 571-272-7663. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Lamson D Nguyen/  
Primary Examiner, Art Unit 2861

04/26/08